energy spectrum produced by irradiating nucleic acids in said microorganisms at a wavelength between 242-257 nm, comprising:

(a) contacting said sample with a medium comprising solid phase immobilized antibodies which specifically bind to a characteristic cell surface antigen on said microorganism to form an antigen-antibody complex, thereby immobilizing said microorganism on said solid phase;

(b) irradiating the solid phase of step (a) with a laser light of 242-257 nm to produce a resonance enhanced Raman backscattered energy spectrum; and

(c) comparing said induced spectrum of step (b) with said characteristic spectrum to detect the presence of said microorganism in said sample.

10. The method of claim 9 wherein the solid phase a step (a) is washed to remove unbound sample and medium before the irradiating step (b).

11. The method of claim 9 wherein said characteristic spectrum is at 1498 cm^{-1}.

12. A system for the detecting the presence of a specific microorganism in a sample, said microorganism having a characteristic resonance enhanced Raman backscattered energy spectrum produced by irradiating nucleic acids in said microorganisms at a wavelength between 242-257 nm, comprising:

(a) means for contacting said sample with a medium comprising solid phase immobilized antibodies which specifically bind to a characteristic cell surface antigen on said microorganism to form an antigen-antibody complex, thereby immobilizing said microorganism on said solid phase;